WHAT IS CLAIMED IS:

1. An isolated EER-7 protein having an amino acid sequence comprising at least 10 contiguous amino acids from the sequence depicted in SEQ ID NO:2 or which has at least 60% sequence similarity with SEQ ID NO:2, which EER-7 protein has (i) lysyl oxidase activity; (ii) comprises four copies of a SRCR domain having a sequence greater than 80% similar to a sequence selected from the group consisting of SEQ ID NOs: 3, 4, 5, and 6; and (iii) comprises a conserved catalytic domain of lysyl oxidase enzymes having a sequence as depicted in SEQ ID NO: 7.

2. The EER-7 protein of claim 1, wherein the protein has specific binding activity with an anti-EER-7 antibody.

3. The EER-7 protein of claim 1 which is a human EER-7 protein.

4. The EER-7 protein of claim 3 which has an amino acid sequence as depicted in SEQ ID NO: 2.

5. The EER-7 protein of claim 3 which is encoded by a nucleic acid having a sequence as depicted in SEQ ID NO: 1.

6. The EER-7 protein of claim 1 having at least 60% sequence identity to human EER-7 protein having an amino acid sequence as depicted in SEQ ID NO: 2.

7. A polypeptide fragment of an EER-7 protein, wherein the fragment has a property selected from the group consisting of:

a) comprising from one to four copies of a SRCR domain having a sequence greater than 80% similar to a sequence selected from the group consisting of SEQ ID Nos: 3, 4, 5, and 6;

b) a conserved catalytic domains of lysyl oxidase enzymes having a sequence as depicted in SEQ ID NO: 7;

c) specific binding activity with an anti-EER-7 antibody; and

d) any combination thereof.

8. An isolated nucleic acid encoding the EER-7 protein of claim 1.

9. The nucleic acid of claim 8 which is a cDNA.

10. The nucleic acid of claim 8, wherein the EER-7 protein is a human EER-7 protein.

11. The EER-7 protein of claim 10 which has an amino acid sequence as depicted in SEQ ID NO: 2.

12. The nucleic acid of claim 8 which comprises a nucleotide sequence as depicted in SEQ ID NO:1.

13. A vector comprising a nucleic acid encoding a fragment of an EER-7 protein operatively associated with an expression control sequence, wherein the fragment has a property selected from the group consisting of:

a) comprising from one to four copies of a SRCR domain having a sequence greater than 80% similar to a sequence selected from the group consisting of SEQ ID Nos: 3, 4, 5, and 6;

b) a conserved catalytic domains of lysyl oxidase enzymes having a sequence as depicted in SEQ ID NO: 7;

c) specific binding activity with an anti-EER-7 antibody; and

d) any combination thereof..

14. The vector according to claim 13, wherein the fragment of an EER-7 protein is a full length EER-7 protein.

15. A host cell transfected with the vector of claim 14.

16. A non-human animal transformed with the vector of claim 14, wherein the animal expresses an EER-7 protein at a detectable level in response to estrogen.

17. A method for producing EER-7 protein, which method comprises isolating EER-7 protein produced by the host cells of claim 15, wherein the host cells have been cultured under conditions that provide for expression of the EER-7 protein by the vector.

18. An isolated nucleic acid of at least 20 bases that hybridizes under stringent conditions with a nucleic acid having a nucleotide sequence as depicted in SEQ ID NO: 1.

19. The nucleic acid of claim 18, wherein at least ten nucleotides are contiguous nucleotides from the nucleic acid sequence as depicted in SEQ ID NO: 1.

20. The nucleic acid of claim 18 which is detectably labeled.

21. An antibody that specifically binds to the EER-7 protein of claim 1.

22. A method for detecting an EER-7 protein, which method comprises detecting binding of the antibody of claim 21 to a molecule in a sample suspected of containing an EER-7 protein, wherein the antibody is contacted with the sample under conditions that permit specific binding with any EER-7 protein present in the sample and binding of the antibody to the molecule in the sample indicates the presence of EER-7.

23. A method for detecting expression of *EER-7*, which method comprises

detecting mRNA encoding *EER-7* in a sample from a cell suspected of expressing *EER-7*.

24. The method according to claim 23 wherein mRNA encoding *EER-7* is detected by hybridization to an *EER-7*-specific nucleic acid.

25. The method according to claim 24 wherein the *EER-7*-specific nucleic acid is at least 10 nucleotides in length and has a sequence identical to a sequence of the same number of bases in SEQ ID NO: 1, or the complementary sequence thereof.

26. An assay system for identifying selective estrogen receptor ligands, comprising transformed cells that express different functional estrogen receptors, wherein the number of cells is sufficient to transcribe a detectable amount of mRNA encoding EER-7.

27. The assay system of claim 26, wherein the estrogen receptor is a human estrogen receptor.

28. The assay system of claim 26 which is an endothelial cell.

29. The assay system of claim 28 which is a human umbilical vein cell.

30. A method for identifying a compound that selectively regulates *EER-7* mRNA transcription through an estrogen receptor, which method comprises detecting a difference in the level of *EER-7* mRNA in an assay system of claim 26 contacted with a test compound, wherein a difference in the level of *EER-7* mRNA indicates that the test compound selectively regulates the estrogen receptor.

31. The method according to claim 30, wherein the test compound is an estrogen or an estrogen analog.

32. The method according to claim 31, wherein the test compound is an estrogen receptor selective agonist or antagonist.

33. The method according to claim 30, wherein the level of mRNA decreases when contacted with a test compound that regulates expression through the estrogen receptor.

34. The method according to claim 30, wherein the level of mRNA increases when contacted with a test compound that regulates expression through the estrogen receptor.

35. The method according to claim 30, wherein the estrogen receptor is a human estrogen receptor.

36. The method according to claim 30, wherein the first estrogen receptor is an ERα.

37. The method according to claim 36, wherein the second estrogen receptor is an ERβ.

38. The method according to claim 30, wherein the cell is an endothelial cell.

39. The method according to claim 38, wherein the cell is a human umbilical vein cell.

40. The polypeptide fragment of claim 7, wherein the four copies of SRCR domains comprise the sequences as depicted in SEQ ID NOS: 3-6.

41. The polypeptide fragment of claim 7, having at least 46% sequence similarity to the catalytic domain of lysyl oxidase enzyme having an amino acid sequence as depicted as SEQ ID NO: 7.

42. The assay system of claim 26, wherein the transformed cells comprise two different populations.

43. The assay system of claim 42, wherein one population expresses the ERα estrogen receptor.

44. The assay system of claim 43, wherein the other population expresses the ERβ estrogen receptor.

45. A non-human EER-7 knockout animal, wherein endogenous EER-7 expression is suppressed in the animal.

46. A non-human animal transformed with a vector comprising a nucleic acid encoding a protein that regulates EER-7 expression, wherein the protein is operatively associated with an expression control sequence; wherein the animal expresses an EER-7 protein at a detectable level in response to estrogen.